Methods of Communication with Deaf-Blind People
Revised Edition
by Annette B. Dishmore
Two Copies

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by

ANNETTE B. DINSMORE

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American Foundation for the Blind
15 West 16th Street, New York 11, N. Y.

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American Foundation for the Blind
New York

This pamphlet is one in a series of monographs issued from time to time by the American Foundation for the Blind in an attempt to disseminate information on projects carried out by the Foundation and on present-day services to blind persons. The monographs are classified according to their subject into:

1. General Information
2. Preschool Series
3. Education Series
4. Vocational Series
5. Research Series
6. Group Reports
7. Legislative Series
8. Studies in Community Planning

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FOREWORD

This handbook is intended as an aid to families and friends of the deaf-blind as well as to professional personnel who work with them. It is also our sincere hope that deaf-blind persons themselves will find it a useful tool in establishing contact with their surroundings.

The American Foundation for the Blind is pleased to make this information available.

M. Robert Barnett
Executive Director

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INTRODUCTION

The greatest problem facing any deaf-blind person is communication with others. There are many different methods which fall generally into two types: communication by hand, or by use of a mechanical device. Psychologically, it has been found that the touch of hand upon hand establishes a rapport similar to that developed through auditory or visual stimuli. For the deaf-blind, the hand takes the place of a smile or tone of voice. If, however, a device can overcome the reluctance of the general public to attempt conversation with deaf-blind people, it will have served an invaluable purpose. In addition, it may offer quick help in an emergency situation with strangers.

In recognition of the need for a manual for workers who serve deaf-blind people, this handbook was published in braille and print in March 1951 and reprinted in March 1953. It was compiled in cooperation with the Committee on the Deaf-Blind of the Western Conference of Home Teachers, and we believe it has been a real help in presenting various methods of communication.

This revised edition includes new developments and several methods omitted from the first, as well as more detailed suggestions for the application of various methods. It is hoped that this compilation, again published in braille and print, will prove a practical tool which will be helpful.

First of all, it is important to realize that it is possible to talk directly with a deaf-blind person. It is also important to recognize the urgency of his need for as many contacts as possible in order to relieve some of the strain he undergoes in the isolation surrounding him. A deaf-blind person must of necessity endure many experiences of loneliness which cannot be avoided, but if people will make an effort to learn how to talk to him, and will take the time to do so, it will help in some measure to break through the barrier of silence.

When a worker undertakes to serve a deaf-blind person, it is his responsibility to establish communication in order to have direct relationship, rather than working through an interpreter. If the client uses a given method of communication, the worker should learn that method. The worker may feel self-conscious at first, but the deaf-blind person will appreciate the effort, and will often be delighted to help teach.

If, on the other hand, the client does not yet have any method of communication, the worker must determine which method will be best for this individual, and then help him learn it.

To determine the best method, it is important to know and understand the deaf-blind person's past experience. As in any teaching, the worker starts with what is known and familiar, and builds up a sense of security. For example, if a client has had sight and, therefore, knows the shape of letters, it would be practical to start by printing in the palm of the hand.

The problems of the deaf-blind person will be better understood if he is considered in relation to the following general groupings:

1. The person who loses both sight and hearing in adult life.
2. The person who has been deaf from birth or early childhood and loses his sight in adult life.
3. The person who has been blind from birth or early childhood and loses his hearing as an adult.
4. The person who has been both deaf and blind from birth or early childhood.

There are various methods of communication for deaf-blind people, and each one has its merits as well as its disadvantages. In order to understand the use of these methods, it will be found helpful to separate them into two groups. First, there are those methods which require a process of learning on the part of the speaker as well as on the part of the deaf-blind person; and second, there are the methods which require learning only for the deaf-blind individual and can be used by him for immediate conversation with anyone. Therefore, this material has been divided into two groups as shown in the table of contents.

GENERAL SUGGESTIONS

The worker should make every effort to help the deaf-blind client to be outgoing toward others. If he can learn to take the initiative and explain his method of communication in detail when he meets someone for the first time, he will soon realize that people are finding it easier to talk to him. Even the deaf-blind client who cannot speak out loud can learn to show strangers how to communicate with him by actual demonstration. It is easily understood why many deaf-blind people tend to withdraw, especially when facing new situations. Many of them will need a great deal of help and interpretation if they are to acquire the skill of putting the stranger at his ease—of breaking the ice, so to speak.

Every deaf-blind person needs quick signals for "yes" and "no." These signals can speed up the conversation, no matter which method of communication is used. For example, often a deaf-blind person anticipates a word, phrase, or whole sentence, and a "yes" eliminates the necessity of spelling out the entire thought. If, on the other hand, his anticipation is incorrect, the signal for "no" catches the error immediately and saves time in explanation.

The nature of the signals for "yes" and "no" varies with individual preference. Some deaf-blind people use one tap for "yes" and two for "no," while others reverse this and use two taps for "yes" and one for "no." However, if the speaker moves the deaf-blind person's hand up and down for "yes" and side to side for "no," as if nodding or shaking the head, he will understand these regardless of his own adopted system.

Other signals can be of great help although they are not as indispensable as "yes" and "no." "I don't know" can be indicated, perhaps, by three taps. A drawn question mark can mean "what," and a circle can show that the speaker is repeating something that another person in the room is saying.

Short cuts based on a knowledge of braille can also save time and can be applied to any of the methods described here, except the sign language or the Vibration Method. Standard braille abbreviations are easily understood and the alphabet word signs can be clear if some indication is made between words.

METHODS OF COMMUNICATIONS

Group 1

The following methods of communication require a process of learning on the part of the speaker as well as for the deaf-blind person.

THE AMERICAN ONE-HAND MANUAL ALPHABET

In the United States the one-hand manual alphabet of the deaf is one of the best-known methods of communication with the deaf-blind and can be used with great speed. This method is particularly appropriate for those deaf-blind people who have been deaf from birth or early childhood, since their families and friends (many of whom may be deaf themselves) probably know the alphabet well.

A newly blinded deaf person may experience some emotional reaction at the necessity for reading the alphabet by touch and he may need a great deal of reassurance and help. The speaker must be careful to move his fingers directly from the position of one letter to the next. Extraneous movements may approximate the positions of additional letters which would confuse the spelling. Spell smoothly with some rhythm and pause slightly between words.

The deaf-blind person can read the letters by touch, placing his hand lightly *over* the speaker's to feel the positions of the fingers. It is possible also for the deaf-blind person to learn to read the letters from the back of the hand, and although this may take more practice, it offers an opportunity to keep the hands relaxed in the lap. The deaf-blind reader holds his hand with the palm on the back of the speaker's hand, his thumb touching the speaker's thumb, and each finger touching the corresponding finger of the speaker. In this way his fingers follow each movement of the speaker's fingers in unison.

Detailed description:

The position of the hand, unless otherwise indicated, is up with the palm turned away from the speaker.

A. Fold the four fingers flat against the palm and point the thumb up, holding it tightly against the bent index finger.

B. Point the four fingers straight up, holding them tightly together and bend the thumb across the palm.

C. Holding the four fingers together, curve them downward and curve the thumb upward toward the bent index finger. (This looks like a print letter "C.")

D. Point the index finger straight up and make a circle with the thumb and the other three fingers by placing the tip of the thumb against the tip of the middle finger. The fingers are curved tightly together.

E. Bend the thumb across the palm and place the tips of the four fingers tightly together along the upper edge of the thumb.

F. Bend the index finger forward. The other three fingers and thumb point straight up. Hold the fingers tightly together and place the thumb against the second joint of the index finger.

G. Drop the wrist so that the hand is horizontal and the palm inward. Point the index finger and the thumb, curling the other three fingers into the palm, the thumb and index finger almost touching. (This looks as if you are pointing a gun.)

H. This letter is made exactly like "G" except that the middle finger also is pointing, held tightly against the index finger.

I. Make a fist and point the little finger straight up.

J. Starting with "I," bring the tip of the little finger down and then up to the left in a hook, moving the whole hand from the wrist. You are drawing a print "J" in the air. (This letter is identified by the movement.)

K. Point the index finger straight up and the middle finger straight up and slightly forward so that the two fingers are separated. Place the tip of the thumb between the two fingers at the base. The ring and little fingers are curled into the palm.

L. Point the index finger straight up and the thumb at right angles to it. (This looks like a print "L.") The other fingers are curled into the palm.

M. Holding the little finger down with the tip of the thumb, bend the index, middle, and ring fingers over the thumb, holding them tightly together and pointing downward.

N. "N" is made exactly like "M" except that the ring and little fingers are held down with the tip of the thumb and only the index and middle fingers are bent over the thumb.

O. Make a circle with the four fingers and the thumb by placing the tip of the thumb against the tip of the index finger, holding the four fingers tightly together.

P. Drop the wrist halfway with the hand extended away from you and the palm turned down. Point the index finger straight out and the middle finger down. Place the ball of the thumb against the first joint of the middle finger and curl the ring and little fingers into the palm.

Q. "Q" is made exactly like "G" except that the whole hand is pointing downwards and the thumb and index finger are slightly more separated.

R. Make a fist and then cross the middle finger over the index finger pointing them upward.

S. Make a fist and bend the thumb across the front of the bent fingers.

T. Make a fist and then put the tip of the thumb up between the index and middle fingers.

U. Make a fist and then point the index and middle fingers up straight holding them tightly together.

V. Make a "U" and then separate the index and middle fingers to look like a print "V."

W. Hold the little finger down with the tip of the thumb, point the three other fingers up and separate them.

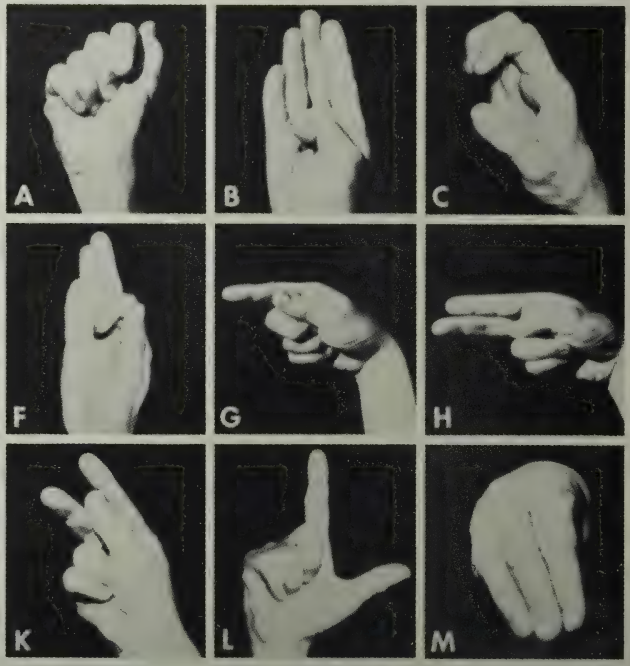
X. Make a fist and then raise the index finger up above the others by straightening it at the knuckle joint but keeping it bent at the other two joints to look like a hook.

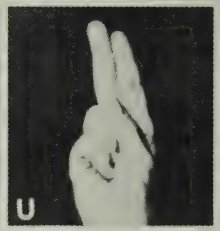
Y. Point the little finger and thumb up straight with a slight outward slant. The other three fingers are bent down.

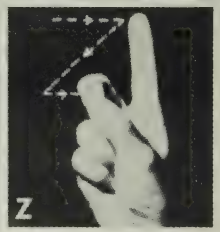
Z. Make a fist and then point the index finger. With the tip of the index finger, draw a zigzag in the air as follows: make a horizontal stroke from left to right, a diagonal stroke down to the left and a horizontal stroke from left to right, thus drawing "Z" in the air. (This letter is identified by motion.)

THE AMERICAN ONE-HAND MANUAL ALPHABET USED BY DEAF-BLIND PERSONS

Actual photographs of Helen Keller's hand taken for the American Foundation for the Blind.







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THE AMERICAN TWO-HAND MANUAL ALPHABET

The two-hand manual alphabet is easy to learn but few people are familiar with it. There are wide variations in different parts of the country. However, allowing for individual differences, the detailed directions given below should give the basic formation which could be understood by anyone familiar with the use of this alphabet.

It is not advisable to introduce this method since it is awkward, comparatively slow, and occupies both hands of the speaker and receiver. It has been included here so that it can be understood in talking to a deaf-blind person who prefers this system.

Detailed description:

The speaker uses both hands in forming the letters of the two-hand manual alphabet and the deaf-blind person places his two hands on the speaker's hands to follow the movements.

A. The tips of the index fingers of the right and left hand touch, forming an inverted "V." In the same manner the tips of the thumbs touch. The remaining fingers of both hands are curled into the palms.

B. Two circles are formed by joining the tip of the index finger with the tip of the thumb, right and left hand. The two circles, thus formed, are brought together at the tips of the fingers used. The remaining fingers may be held in rounded position or extended.

C. The shape of a letter "C" is made, usually with the left hand, by curving the fingers and thumb.

D. The index finger of the left hand is pointed straight up. The tip of the index finger of the right hand touches the tip of the index finger of the left hand, and the tip of the thumb of the right hand touches the inside base of the index finger of the left hand. The remaining fingers and the left thumb are curled into the palms.

E. In making "E," both hands are held with the palms down. The index and middle fingers of each hand are extended and held tightly together. The index and middle fingers of the right hand are crossed at right angles on top of the index and middle fingers of the left hand. The other fingers and thumbs are curled into the palms.

F. The hands are held in the same position as for "E" but only

the index finger of the right hand is crossed on top of the index and middle fingers of the left hand. The other fingers and thumbs are curled into the palms.

G. Simultaneously both fists are clenched, thumbs on the outside. Holding the fists in a vertical position, the right fist is placed on top of the left.

H. In one stroke, the palm of the right hand slides across the left hand, starting at the wrist and ending at the finger-tips.

I. This letter is made by touching the cheekbone just below the right eye with the index finger of the right hand.

J. The little finger of the right hand is pointed and curved along the jaw, forward from the right ear.

K. The index finger of the left hand is extended straight up. The second knuckle of the index finger of the right hand is placed against the inside of this finger, midway between the first and second joints, holding the back of the right hand up and bending the index finger of the right hand at the second knuckle so that the finger takes the position of the horizontal "V." The letter thus formed resembles a print "K." The other fingers and thumbs are curled into the palms.

L. The left hand is extended, palm up, while the right hand makes an "L" in the palm of the left hand by extending the index finger toward the index finger of the left hand and extending the thumb of the right hand at the wrist, just below the palm of the left hand. The remaining fingers of the right hand are curled into the palm.

M. The left hand is extended, palm up, while the index, middle, and ring fingers of the right hand are placed in the palm of the left hand, nails up and fingers together.

N. This letter is made the same as "M" except that only the index and middle fingers of the right hand are placed in the palm of the left hand.

O. An "O" is made with the left hand by curving the fingers and thumb to form a circle, joining the tip of the index finger with the tip of the thumb.

P. The tips of the index finger and thumb of the right hand are brought together, forming a circle which is held vertically. The tips of these fingers touch the tip of the index finger of the left hand which is pointed up. The rest of the fingers and thumb of the left hand are curled into the palm.

Q. A circle is made with the left hand as in making the letter

"O." The index finger of the right hand is hooked into this circle at the base of the thumb, resembling a print "Q." The remaining fingers and thumb of the right hand are curled into the palm.

R. The left hand is extended, palm up, and fingers and thumb held closely together, while the index finger of the right hand is curved and laid flat on its side in the palm of the left hand. The remaining fingers and thumb of the right hand are curled into the palm.

S. The little finger of the right hand is hooked over the little finger of the left hand, holding the palm of the right hand down and the palm of the left hand up.

T. The index finger of the left hand is extended horizontally. The tip of the index finger of the right hand touches the left index finger from underneath at mid-point, resembling a print "T." The remaining fingers and thumbs of both hands are curled into the palms.

U. The left hand is extended, palm up, while the index finger and thumb of the right hand are placed on the left palm in a semicircular position.

V. The left hand is extended, palm up, and the index and middle fingers of the right hand are placed on the left palm separated in the shape of a print "V."

W. The hands are clasped together with the right hand on top and the palms together. The fingers are not interlaced but are held tightly together, folded over the back of the opposite hand while the thumbs interlock.

X. The two index fingers are pointed and crossed at right angles with the sides of the fingers touching. The right index finger is on top of the left and the other fingers and thumbs are curled into the palms.

Y. The index finger and thumb of the left hand are pointed up and separated. The top of the index finger of the right hand is placed between them at the base on the back of the left hand. The other fingers and the right thumb are curled into the palms.

Z. The left hand is placed under the right elbow and the right hand touches the left shoulder.

THE BRITISH MANUAL ALPHABET FOR THE DEAF-BLIND

This method of communication is used in Great Britain and the Commonwealth nations and was adapted from the two-hand manual alphabet used by the deaf in those countries. It is a rapid method, easy to learn, involving the use of one hand of the speaker and one of the deaf-blind receiver. The speaker can consider the receiving hand as a sheet of paper upon which he is writing a message. No hand movement is required of the deaf-blind receiver—his hand is relaxed and passive, and all manipulations are carried out by the speaker's hand.

It must be noted that this system is almost completely unknown in the United States.

Detailed description:

The vowels are written by touching the tips of the five fingers in order, commencing with the thumb for "A," and finishing with the little finger for "U."

B. The fingers are bunched so that the tips meet in an irregular ring, and placed in that form on the palm of the hand.

C. The forefinger makes a circular flick down the inner side of the thumb and along the curve between the thumb and forefinger, finishing at the top of the forefinger.

D. The tip of the forefinger touches the tip of the receiver's forefinger, while the tip of the thumb touches the base of the forefinger.

F. The forefinger and middle finger are placed close together at right angles across the forefinger.

G. The fist is clenched and placed on the palm, with thumb in highest position and little finger on the palm.

H. The hand is laid flat across the palm and moved upwards along the fingers and so off the hand.

J. The tip of the forefinger touches the tip of the middle finger and is then brought down to the palm of the hand.

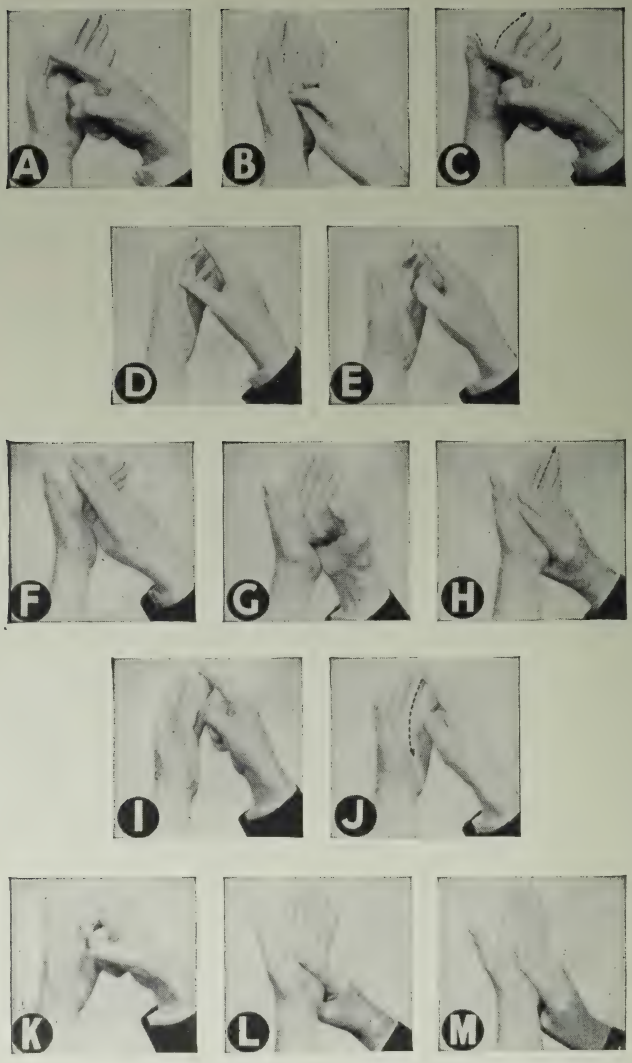
K. The forefinger is bent, palm turned down, and middle part laid along the forefinger.

L. The forefinger is laid across the palm.

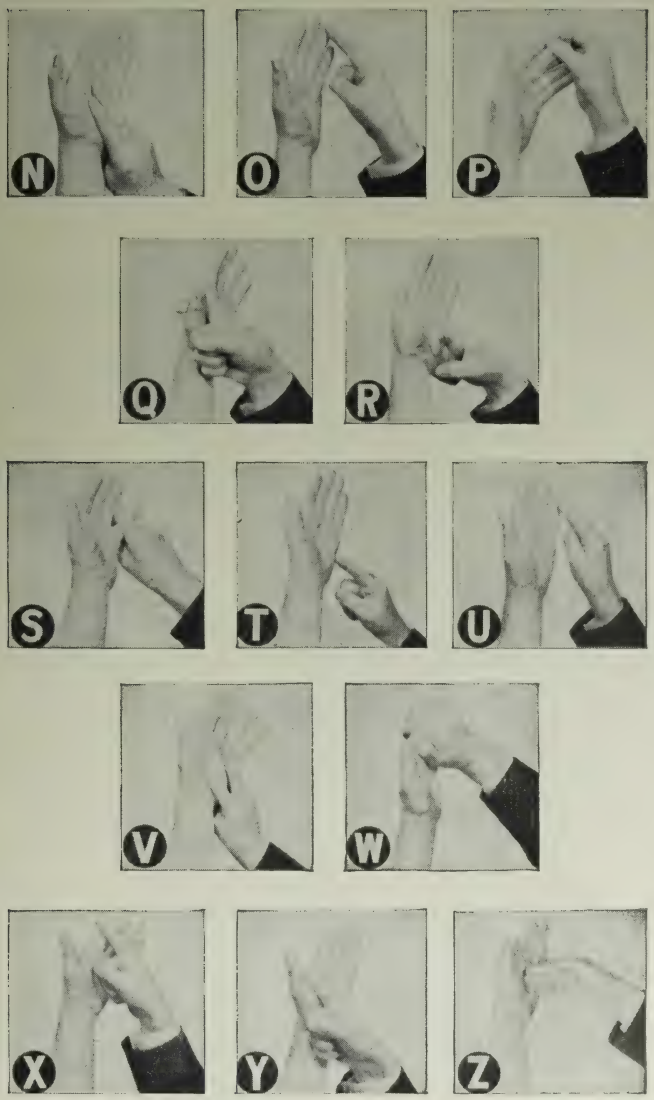
M. The first three fingers, touching, are laid across the palm.

N. The first two fingers, touching, are laid across the palm.

P. The tip of the forefinger is lightly held by the tips of the forefinger and thumb.



The British Manual Alphabet for the Deaf-Blind—A-M



The British Manual Alphabet for the Deaf-Blind—N-Z

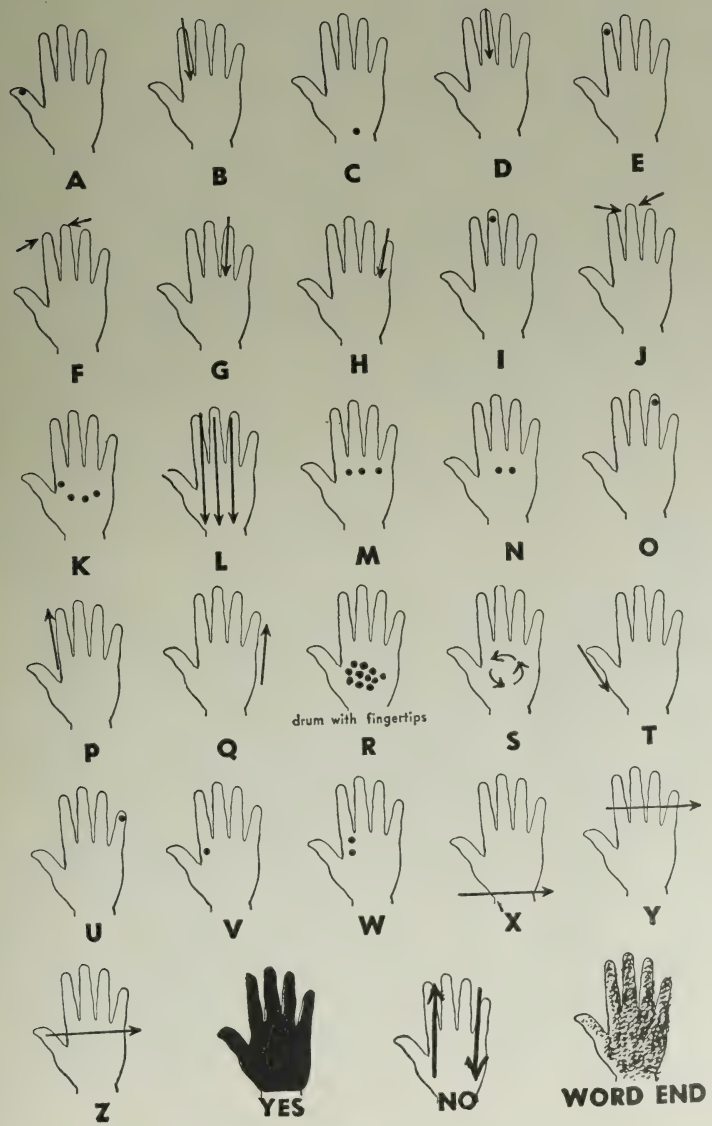
Q. The forefinger is placed on the fork between the forefinger and thumb, and hooked round the base of the thumb.
R. The forefinger is bent and laid across the palm.
S. The forefinger is bent and linked with the little finger.
T. The tip of the forefinger touches the palm of the hand the side farthest from the thumb.
V. The forefinger and middle finger are separated as far as possible and laid across the palm.
W. The palm of the hand is laid flat across the fingers and the fingers bent over and round the fingers.
X. The forefinger is laid at right angles across the forefinger.
Y. The forefinger is placed in the joint between the thumb and forefinger.
Z. The tips of the fingers in a row touch the middle of the palm.

THE LORM ALPHABET OF THE DEAF-BLIND

The Lorm alphabet was developed in Europe about 1881, and has been widely practiced in Germany, Austria and Holland. This method is also rapid, easily learned, and involves the use of one hand of the speaker and one hand of the deaf-blind receiver. In using this alphabet, the receiver's hand may be touched on the palm or on the back, according to preference. The receiver's hand is relaxed and passive while, as in the British method, all manipulations are carried out by the speaker's hand. The Lorm alphabet is unknown in the United States.

Detailed description:

A. Touch the tip of the thumb.
B. Stroke along the index finger from tip to base.
C. Touch the pulse.
D. Stroke along the middle finger from tip to base.
E. Touch the tip of the index finger.
F. Press tips of index and middle finger together.
G. Stroke along the ring finger from tip to base.
H. Stroke along little finger from tip to base.
I. Touch the tip of the middle finger.
J. Press tip of middle finger.
K. Tap the middle of the hand with the four fingertips in a row close together.
L. With the palm, stroke hand from fingertips to wrist.



The Lorm Alphabet

M. Touch the middle of the hand three times.
N. Touch the middle of the hand twice.
O. Touch the tip of the ring finger.
P. Stroke along the thumb side of the index finger from base to tip.
Q. Stroke along the outer side of little finger from base to tip.
R. Drum on the middle of the hand.
S. Draw circle on the middle of the hand.
T. Stroke along outer side of thumb from tip to base.
U. Touch the tip of the little finger.
V. Touch the hand once between the thumb and index finger.
W. Touch the hand twice between the thumb and index finger.
X. Stroke across the wrist.
Y. Stroke across the fingers.
Z. Stroke across the middle of the hand.

THE INTERNATIONAL MORSE CODE

The International Morse Code can be employed with speed and effectiveness in communication with a deaf-blind person. The signals may be given on any part of the body, using a tap for the dot and a short stroke for the dash. In this way the hands of the deaf-blind person are free to continue some occupation.

Detailed description:

A	.–	**N**	–.
B	–...	**O**	–––
C	–.–.	**P**	.––.
D	–..	**Q**	––.–
E	.	**R**	.–.
F	..–.	**S**	...
G	––.	**T**	–
H	....	**U**	..–
I	..	**V**	...–
J	.–––	**W**	.––
K	–.–	**X**	–..–
L	.–..	**Y**	–.––
M	––	**Z**	––..

In spelling a sentence allow a brief pause between letters, a longer pause between words.

THE HADLEY TACTAPHONE

The International Morse Code is particularly valuable for use on the telephone by means of a special device known as the Hadley Tactaphone. A light, vibrating disc is installed in the reverse side of the telephone receiver. The clicks made by the dialing of the telephone on the other end of the wire can be felt in the vibrating disc by the deaf-blind receiver. To relay messages, the sender dials 1 (one) for a dot and (four) for a dash, pausing slightly between letters and longer between words. No equipment is needed for the sender except a card showing the code, but the system requires a thorough understanding of the code on the part of the deaf-blind receiver.

The Hadley Tactaphone was developed by the Illinois Bell Telephone Company in cooperation with the Hadley School for the Blind, and the device is being used effectively by one of the school's instructors who is deaf-blind.

The Hadley Tactaphone

Detailed description:

Hadley Tactaphone Code Chart

Dial **o** once — for **Yes**
Dial **o** twice — for **No**
Dial **o** three times — for **I don't know**

To spell out a message, dial 1 (one) for a dot, 4 (four) for a dash. Allow a brief pause between letters, a longer pause between words.

A.	1 4	**N.**	4 1
B.	4 1 1 1	**O.**	4 4 4
C.	4 1 4 1	**P.**	1 4 4 1
D.	4 1 1	**Q.**	4 4 1 4
E.	1	**R.**	1 4 1
F.	1 1 4 1	**S.**	1 1 1
G.	4 4 1	**T.**	4
H.	1 1 1 1	**U.**	1 1 4
I.	1 1	**V.**	1 1 1 4
J.	1 4 4 4	**W.**	1 4 4
K.	4 1 4	**X.**	4 1 1 4
L.	1 4 1 1	**Y.**	4 1 4 4
M.	4 4	**Z.**	4 4 1 1

THE CROSS CODE

The cross code which was devised by a deaf-blind man for his own use in communicating with his family and friends has proved very effective and rapid. It can be learned with comparative ease. Although the directions given below are based on the positions of the signals on the back of the hand, these signals can be made on any part of the body so that the hands of the deaf-blind person are free to continue some occupation.

Detailed description:

This code is based on a system of taps and strokes. In learning, it is well to use the back of the hand. Picture a cross on the back of the hand with a horizontal line running from midway between thumb and knuckle of the index finger straight across to the outside of the hand, and a vertical line from the knuckle of the middle finger straight down to the wrist. The four ends of the cross and the center are the locations used for the taps and strokes. The letters are grouped so that direction for taps and strokes changes with each vowel, a, e, i, o, u.

Keeping the cross in mind, the "a" group is located in the center, the "e" group to the deaf-blind person's right, the "i" group to his left, the "o" group down toward the wrist, and the "u" group up toward the knuckle of the middle finger. The speaker makes the taps and strokes lightly with the tip of the index finger. To make a stroke, simply draw a short line with the tip of the finger.

The letters are as follows:

The "a" group, in the center, is made up of taps only.

A. 1 tap
B. 2 taps
C. 3 taps
D. 4 taps

The "e" group. Every letter in the "e" group takes its direction from the center of the cross to the right of the deaf-blind person.

E. 1 stroke to the right
F. 1 broken stroke to the right
G. 1 stroke to the right returning to the center without lifting the finger
H. 1 stroke to the right followed by a tap at the end of the stroke

The "i" group. Every letter in the "i" group takes its direction from the center of the cross to the left of the deaf-blind person.

I. 1 stroke to the left
J. 1 broken stroke to the left
K. 1 stroke to the left returning to the center without lifting the finger
L. 1 stroke to the left followed by 1 tap at the end of the stroke
M. 1 stroke to the left followed by 2 taps at the end of the stroke
N. 1 stroke to the left followed by 3 taps at the end of the stroke

The "o" group. Every letter in the "o" group takes its direction from the center of the cross to the deaf-blind person's wrist.

O. 1 stroke to the wrist
P. 1 broken stroke to the wrist
Q. 1 stroke to the wrist returning to the center without lifting the finger
R. 1 stroke to the wrist followed by 1 tap at the end of the stroke
S. 1 stroke to the wrist followed by 2 taps at the end of the stroke
T. 1 stroke to the wrist followed by 3 taps at the end of the stroke

The "u" group. Every letter in the "u" group takes its direction from the center of the cross to the deaf-blind person's knuckle of the middle finger.

U. 1 stroke to the knuckle
V. 1 broken stroke to the knuckle
W. 1 stroke to the knuckle returning to the center without lifting the finger
X. 1 stroke toward the knuckle followed by 1 tap at the end of the stroke
Y. 1 stroke toward the knuckle followed by 2 taps at the end of the stroke
Z. 1 stroke toward the knuckle followed by 3 taps at the end of the stroke

Additional signals: (Make the taps on some other part of the body so that these are not confused with the letters.)

1 tap—"yes"
2 taps—"no"
3 taps—"I don't know"
Circle—quotation marks

BRAILLE HAND SPEECH

Braille hand speech is especially useful for a person blind from childhood who has become deaf in adult life—a person who has known braille for years and who probably has a number of blind friends.

In this system, the "speaker" points to the six dots in an imaginary braille cell, either in the palm of the deaf-blind person's hand or on the table in front of him. When the palm is used, the speaker points out the dots with his own finger; but when the table is used, the speaker holds the index finger of the deaf-blind person and uses it to point out the dots. In this way, word signs and contractions can be used, but some signal must be given between words so that the alphabet word signs are not confused. This method must be used only with a person who is thoroughly familiar with braille.

Another method of communicating by pretending to write braille can be used by those who are familiar with the braillewriter. The "listener" places the first three fingers of each hand

flat on the table in positions corresponding to the six keys of the braillewriter. The speaker places his fingers on top of the listener's fingers and presses them as if he were using the keys of the braillewriter. Again, some signal must be given between words. It is suggested that the thumb of the speaker touch the thumb of the listener as if it were the space bar.

THE SIGN LANGUAGE OF THE DEAF

The conventional sign language of the deaf is used to some extent as a means of communication with deaf-blind persons. However, since signs are designed for visual perception, it must be assumed that the deaf-blind user has learned them prior to losing sight.

The speaker takes the deaf-blind person's hands in his and moves them for him, forming the various signs wanted. As an alternative method, the deaf-blind person can place his hands on those of the speaker and follow his movements in making the signs, but this is somewhat more difficult. It would be almost impossible and certainly cumbersome to attempt to teach many signs to a blind person.

If a worker has need to learn signs in order to understand some of his deaf-blind clients, the following reference may prove valuable: *The Sign Language* by Dr. J. Schuyler Long, which can be purchased through the American Annals of the Deaf, Gallaudet College, Washington, D. C.

METHODS OF COMMUNICATIONS

Group II

The following methods of communication require a process of learning on the part of the deaf-blind person only.

PRINTING IN THE PALM

Although printing in the palm is slow, it is an effective means for a deaf-blind person to use when he comes in contact with the general public. It is immediately available and by far the majority of people everywhere know how to print. For this reason, it has been recommended as the universal method of communication by the Committee on Services for the Deaf-Blind of the World Council for the Welfare of the Blind, with the thought in mind that a deaf-blind person needs, in addition, a more rapid method to use with familiar associates.

Printing in the palm can be readily understood by a deaf-blind person who has a visual memory of print, but it is possible to teach it to one who has never seen, if he has sufficient motivation.

In teaching a deaf-blind person to understand printing in the palm, it is often necessary to start on the table in front of him. Take his index finger as if it were a pencil and draw large capital letters in succession to form a word. For clarity, it may be best at first to place the letters beside each other as they would appear on paper. Later, print each letter on top of the previous one so that he can become accustomed to this, because the letters must be made one over the other when they are printed in the palm of the hand. As soon as possible, transfer the printing to the palm because when the table is used, many deaf-blind people tend to anticipate and move the "pencil finger" in an opposite direction from that of the "speaker." This can be extremely fatiguing.

When the palm is used, the speaker holds the deaf-blind per-

International Standard Manual Alphabet for Printing in the Palm

son's hand lightly in his, palm up. With the index finger of his own hand, the speaker prints capital letters as large in size as the palm permits. The speaker's palm flat on the "receiver's" palm can be used as an indication between words if this seems to make the words more readily understood. When a mistake is made, the speaker can rub the palm as if erasing the word.

A few deaf-blind people are able to understand when the speaker uses script instead of capital print letters. The speaker writes with his finger along the deaf-blind person's arm, or, holding the receiver's finger as if it were a pencil, writes on the table. Writing in this way is much faster than print and is easier for the speaker, but script is extremely difficult to recognize by touch and is far less uniform than print.

Script writing in the air instead of on the table is used by a few

people, but this method is also very hard to learn for the deaf-blind person.

Letters printed in the palm should be clear and made with natural strokes familiar to anyone who has lost sight in adult life and who has learnt to print when he could still see. If the strokes are made in the wrong direction, it is probable that the letters will not be recognized by touch.

Detailed description:

Consider the palm of the hand as a square.

A. Start at lower left-hand corner. Draw a slanting line up to the center of the top line of the square. Without raising the "pencil," draw a slanting downward line from that point to the lower right-hand corner. Draw a short horizontal line from the left-hand slanting line to the right-hand one, about one-third up.

B. Start at the upper left-hand corner and draw a straight line down to the lower left-hand corner. Starting again at the upper left-hand corner, draw two half circles, the first one ending at a point in the center of the line first drawn, the second starting at that same point without raising the pencil and ending at the lower left-hand corner. The motion is clockwise.

C. Start at the upper right-hand corner and draw three-quarters of a circle counterclockwise, ending at the lower right-hand corner.

D. Start at the upper left-hand corner and draw a straight line down to the lower left-hand corner. Start again at the upper left-hand corner and draw three-quarters of a circle clockwise, ending at the lower left-hand corner.

E. Start at the upper left-hand corner and draw a straight line down to the lower left-hand corner. Start again at the upper left-hand corner and draw a line straight across to the upper right-hand corner. Start at the center of the first line and draw a short line to the right, ending about halfway across. Start at the lower left-hand corner and draw a straight line across to the lower right-hand corner.

F. Repeat directions for "E" but omit the final line.

G. Start at the upper right-hand corner and draw three-quarters of a circle counterclockwise, ending slightly above the lower right-hand corner. Then, without raising the pencil, draw a

short straight line to the left, ending at the center of the square.

H. Start at the upper left-hand corner and draw a straight line down to the lower left-hand corner. Start at the upper right-hand corner and draw a straight line down to the lower right-hand corner. Draw a horizontal line from left to right, joining the two upright lines, halfway up.

I. Start at the midpoint of the top line of the square and draw a straight line down, ending at the midpoint of the bottom line of the square.

J. Start at the top line of the square about one-third in from the upper right-hand corner. Draw a straight line down about two-thirds of the way and then make a hook to the left, touching the bottom line of the square and ending up again about the center of the square.

K. Start at the upper left-hand corner and draw a straight line down to the lower left-hand corner. Start at the upper right-hand corner and draw a slanting line to the center of the line drawn at the left. Without raising the pencil, draw a slanting line from this point, ending at the lower right-hand corner.

L. Start at the upper left-hand corner and draw a straight line down to the lower left-hand corner. Without raising the pencil, draw a horizontal line across the bottom, ending at the lower right-hand corner.

M. Start at the lower left-hand corner. Draw a straight line up to the upper left-hand corner. Without raising the pencil, draw a slanting line down, ending at the midpoint of the bottom line. Without raising the pencil, draw a slanting line up to the upper right-hand corner. Without raising the pencil, draw a straight line down to the lower right-hand corner.

N. Start at the lower left-hand corner. Draw a straight line to the upper left-hand corner. Without raising the pencil, draw a slanting line down to the lower right-hand corner. Without raising the pencil, draw a straight line up to the upper right-hand corner.

O. Draw a complete circle counterclockwise, large enough to touch each side of the square. Be sure to end at the exact point from which you started.

P. Start at the upper left-hand corner and draw a straight line down to the lower left-hand corner. Start again at the upper left-hand corner and draw a half circle clockwise, ending at the midpoint of the left-hand line drawn first.

Q. Draw a complete circle counterclockwise as for "O," and then draw a short slanting line down toward the right across the lower part of the circle.

R. Start at the upper left-hand corner and draw a straight line down to the lower left-hand corner. Start again at the upper left-hand corner and draw a half circle clockwise, ending at the midpoint of the line already drawn. Without raising the pencil, draw a slanting line down to the lower right-hand corner.

S. Start at the upper right-hand corner. Draw a curve counterclockwise in the upper half of the square and continue the curve in a clockwise direction in the lower half of the square, ending at the lower left-hand corner.

T. Start at the upper left-hand corner and draw a horizontal line across the top, ending at the upper right-hand corner. Start at the midpoint of the line just drawn and draw a straight line down, ending at the midpoint of the bottom line of the square.

U. Start at the upper left-hand corner. Draw a straight line down about two-thirds of the way and then curve down to the right, touching the midpoint of the bottom line of the square, then curve up to the right-hand line, about one-third up. From that point draw a straight line up to the upper right-hand corner. The whole letter is made in one continuous motion.

V. Start at the upper left-hand corner and draw a slanting line down to the midpoint of the bottom line of the square. Without raising the pencil, draw a slanting line up to the upper right-hand corner.

W. Start at the upper left-hand corner and draw a slanting line down to a point about one-fourth in from the left-hand lower corner. Without raising the pencil, draw a slanting line up to the midpoint of the top line of the square. Without raising the pencil, draw a slanting line down to a point on the bottom line of the square about one-fourth in from the lower right-hand corner. Without raising the pencil, draw a slanting line up to the upper right-hand corner.

X. Start at the upper left-hand corner. Draw a slanting line down to the lower right-hand corner. Start at the upper right-hand corner and draw a slanting line down to the lower left-hand corner. The two lines cross in the center of the square.

Y. Start at the upper left-hand corner and draw a short slanting line down to the center of the square. Start at the upper right-

hand corner and draw a slanting line down to the lower left-hand corner. This line touches the end of the short line drawn first.

Z. Start at the upper left-hand corner and draw a horizontal line across the top to the upper right-hand corner. Without raising the pencil, draw a slanting line down to the lower left-hand corner. Without raising the pencil, draw a horizontal line across the bottom of the square to the right-hand lower corner.

THE ALPHABET GLOVE

The alphabet glove is a light-colored regular glove of thin fabric, individually marked.

While a number of deaf-blind people have adopted the glove, its use is not as extensive as one might presuppose, considering its simplicity and minimal cost. Less than one-fourth of the deaf-blind people in this country employ this device, and there seems to be no consistency as to the type of individual who does so.

The letters of the alphabet are marked in indelible ink on the palm side of the glove, and are located on the tips, joints, and base of the fingers, while the numerals appear on the fingernails and knuckles on the back. The glove is usually worn on the left hand, which the wearer extends toward the person facing him. Arranged in alphabetical order, the letters are printed so that they are right side up for the speaker. The deaf-blind person memorizes the position of the letters and the speaker spells words to him by pressing them in succession.

Differences in hand structure make it essential that the glove be marked on the individual's hand to ensure exact position of the alphabet.

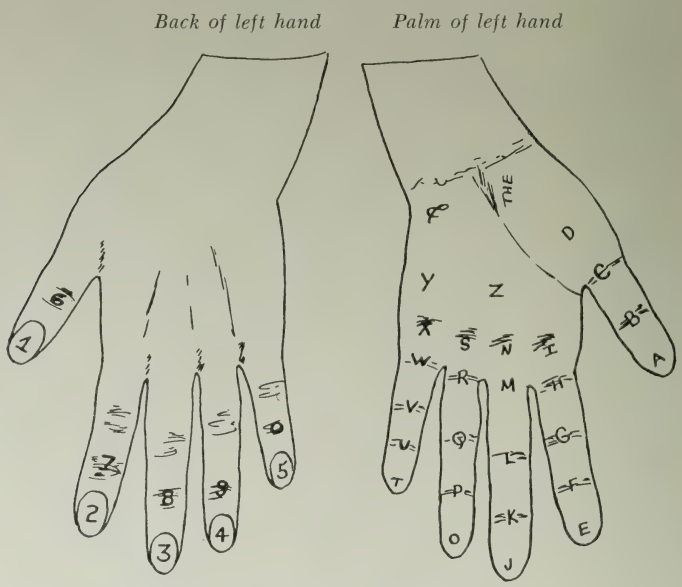
It is possible for a blind person to talk to a deaf-blind person with the glove if he, also, memorizes the position of the letters and if there is a mutual understanding that a letter is indicated only when there is definite pressure on it. In other words, it is necessary for a blind person to locate the exact position on the glove by running his finger along that of the deaf-blind wearer. When the position has been found, the blind speaker can press the spot.

A great deal of speed can be developed by the speaker as he becomes familiar with the glove. For that reason it is often used

not only with strangers, but with relatives and friends, as a daily means of communication. Deaf-blind wearers who have no speech can reply by pointing to the letters.

One objection that has been made to the glove is that it would be uncomfortable to wear it continuously. However, in practice it has been found that the family and close associates soon memorize the position of the letters so that they can talk to the deaf-blind person when he is not actually wearing the glove. Familiarity also makes it possible for the speaker to use all four fingers

Diagram of the Alphabet Glove



to touch the letters—almost as if he were playing a piano and this increases the speed of conversation.

The arrangement of the letters and numerals on the glove is systematic and is as follows:

1. **The letters.** Extend the left hand with the palm facing up. The first four letters are located in the line of the thumb.

A on the tip of the thumb
B on the first joint of the thumb
C on the second joint of the thumb
D on the palm of the hand at the base of the thumb (the section commonly thought of as the fleshy part of the thumb)

The next five letters are located in the line of the index finger.

E on the tip of the index finger
F on the first joint of the index finger
G on the second joint of the index finger
H on the third joint of the index finger
I on the palm of the hand at the base of the index finger

The next five letters are located in the line of the middle finger.

J on the tip of the middle finger
K on the first joint of the middle finger
L on the second joint of the middle finger
M on the third joint of the middle finger
N on the palm of the hand at the base of the middle finger

The next five letters are located in the line of the ring finger.

O on the tip of the ring finger
P on the first joint of the ring finger
Q on the second joint of the ring finger
R on the third joint of the ring finger
S on the palm of the hand at the base of the ring finger

The next six letters are located in the line of the little finger.

T on the tip of the little finger
U on the first joint of the little finger
V on the second joint of the little finger
W on the third joint of the little finger
X on the palm of the hand at the base of the little finger
Y on the palm of the hand midway between the third joint of the little finger and the wrist
Z is located in the center of the palm.

In addition to the letters of the alphabet, the commonly used words "and" and "the" also appear on the glove.

"and" on the palm of the hand in the line with the little finger just before the palm joins the wrist

"**the**" on the palm of the hand in the line of the thumb just before the palm joins the wrist

2. **The numerals.** Extend the left hand so that the palm is facing down.

The first five numbers are located on the fingernails.

1 on the thumbnail
2 on the nail of the index finger
3 on the nail of the middle finger
4 on the nail of the ring finger
5 on the nail of the little finger

The next five numbers are located on the knuckles.

6 on the first knuckle of the thumb
7 on the first knuckle of the index finger
8 on the first knuckle of the middle finger
9 on the first knuckle of the ring finger
0 on the first knuckle of the little finger

THE ALBHABET PLATE

The alphabet plate is 4″ x 6⅜″, weighs approximately 5 ounces, and is made of aluminum alloy.

This plate contains three rows of raised print letters in alphabetical order and one row of raised numerals. The sighted speaker places the deaf-blind person's finger on successive letters to spell words, and, if the deaf-blind individual is mute, he can reply in turn by pointing to various letters. This plate was designed primarily for those who do not know braille to enable them to talk with strangers.

The alphabet plate is a slow method of communication, but an excellent emergency device for the group who have not learned braille. While the letters are attractive to the touch, they are less easily recognized than braille dots. In order to achieve any speed in conversation, it is necessary for the deaf-blind user to become thoroughly familiar with the plate so that he can distinguish the letters quickly by their position on it, rather than by their shape.

This plate was designed by the Industrial Home for the Blind, Brooklyn, New York.

THE BRAILLE ALPHABET CARD

This pocket-size card is embossed with the braille alphabet. Printed letters appear above each braille letter and the method is similar to that of the alphabet plate described above. The device can be used by a deaf-blind person who knows braille to talk with either sighted or blind people. If he is mute, he can reply by pointing to the braille letters. Conversation carried on in this way is also of necessity slow, but a number of deaf-blind people have reported that they find this type of card of help in meeting strangers.

Although perishable, this device is practical because it can be made easily in the home at nominal cost by anyone who knows braille.

CUT-OUT LETTERS

While manufactured commercially as educational toys for children, these letters cut out of plastic or wood can be used to communicate with deaf-blind people. Words are spelled to the individual by handing him letters in succession.

Only a few people employ this method. It is slow; the equipment is cumbersome; and it is useful primarily with elderly persons, newly blind, who are facing emotional adjustments to the double handicap. These people may find initial security in the familiar shape of the letter blocks.

TELLATOUCH

Tellatouch is a device which provides an easy method of communication by means of braille between a sighted "speaker" who does *not* know braille and a deaf-blind "receiver" who can read braille. No training or special skill is required for the speaker to operate this device, although the deaf-blind receiver needs practice to develop speed.

Tellatouch looks like a small portable typewriter and weighs three pounds, seven ounces. It is nine inches square and two and a half inches in height.

Detailed description:

The keyboard is composed of three rows of ten keys each. The upper-most row contains the letters from A to J, the middle row of

The Tellatouch

keys contains the letters from K to S and one key for the number sign. The third row of keys contains the letters from T to Z and one key each for the comma, period and capital sign.

Directly below the three rows of "letter" keys will be found a space bar. On either side of the space bar there are three blank keys denoting the dots in a braille cell. Beginning at the space bar the three keys on the left are dots 1 - 2 - 3, while those on the right, beginning at the space bar, represents dots 4 - 5 - 6 in the braille cell (these keys correspond to a braillewriter keyboard).

Although the majority of the Tellatouch machines have the alphabetic arrangement of keys described above, a few of them have been produced with the standard typewriter keyboard. This arrangement makes it possible to develop a high rate of speed according to the capacity of the deaf-blind receiver.

At the rear of the machine will be found a round metal plate three-fourths of an inch in diameter which has been drilled with holes representing a braille cell.

For operation, the machine is placed between the speaker and the receiver. The receiver places the finger to be used for reading on the circular plate containing the braille cell. When the speaker de-

presses an alphabet key the corresponding braille character will be raised for touch reading in the braille cell on the receiver's side of the machine. It should be noted that the keys must be pressed all the way down—not struck.

At the end of each word, the space bar is depressed to denote a space. This action raises dot three in the braille cell which serves as a signal between words.

The alphabet keys are, of course, limited to grade one braille, but in cases where the speaker is familiar with braille, the keys on each side of the space bar may be used. When these keys are used, grade two braille may be utilized for faster communication.

This machine is a one-way method of communication. It cannot be used to convey a message from the deaf-blind receiver to a speaker who does not know braille.

The keys are protected by a hinged cover when the machine is not in use. A leather strap, which extends entirely around the base of the machine, is adjustable for hand carrying or as a shoulder strap.

Tellatouch was developed in the laboratories of the American Foundation for the Blind, New York, N. Y., and was first produced in 1954.

THE VIBRATION METHOD

The modern system of teaching deaf-blind children to speak and to understand the speech of others through touch is known as the Vibration Method. Instruction in this method must be given only by a skilled teacher who has been trained in the techniques involved.

A deaf-blind person who has learned the Vibration Method can communicate with others orally through speech and reading the lips by touch. He places his thumb on the lips of the speaker and his fingers lightly on the cheek, with his index finger near the nose and his little finger on the jaw. In this way, he detects nasal sounds and catches the movements of the jaw, while his thumb feels the breath sounds and movements of the lips.

It takes years of training to learn the Vibration Method so that deaf-blind adults who can use it are, without exception, those who learned it from early childhood. It might be possible for an adult to acquire this skill, but it is unlikely that he would have an opportunity for sufficient instruction.

The greatest advantage of the Vibration Method is that the deaf-blind person can understand the speech of others without having to have words spelled out, and, therefore, he can converse at a normal speed. It also helps him to retain good speech himself. However, it is not desirable socially for him to place his hand on the face of another in many situations, and, for that reason, deaf-blind people who have been educated by vibration are encouraged to learn one or more additional methods of communication for general use.

COMMENTS

There are additional devices for communication with deaf-blind people in use today that have not been included in this text since, in general, they represent variations of those described here. However, every effort has been made to present all current manual methods of communication. Individual adaptations of some of these methods could have been discussed, but it was felt that these might be confusing and of little value.

The Committee on Services for the Deaf-Blind of the World Council for the Welfare of the Blind is planning to propose a new rapid manual alphabet for universal use, an alphabet based on specific criteria. It will probably consist of a combination of the British Manual Alphabet and the Lorm Alphabet. At the time of this printing, the final draft of the new alphabet has not yet been approved by the Committee, nor presented to the World Council. Copies of the new alphabet will be made available as soon as possible.

In any case, since it may take years before this method is widely adopted, this manual should serve a constructive purpose for anyone working with deaf-blind people.

APPENDIX

Report on an Initial Study on the Value of Tellatouch

(as submitted to the Technical Committee of the World Council for the Welfare of the Blind in the summer of 1954)

When Tellatouch was ready to go into production (in April, 1954), the American Foundation for the Blind undertook an experimental study of the machine in practical, everyday use. To do this, it was necessary to place a number of them for a trial period in the homes of a representative group of deaf-blind people who would frankly express their opinions and reactions. Such statements, it was felt, would offer greater significance than results obtained through strictly controlled testing.

Twenty deaf-blind adults were selected as subjects according to the following criteria:

Characteristics in Common

a. Total deafness.
b. Thorough familiarity with braille.
c. Social contacts (in a position to meet a number of different people).

Differences

Group A. *With normal speech* (10 persons)
1. Extensive vocabulary (5)
2. Limited vocabulary (5)

Group B. *Without understandable speech* (10 persons)
1. Extensive vocabulary (5)
2. Limited vocabulary (5)

Since Tellatouch is a "one-way" method of communication, it was assumed that it might be of little value for deaf-blind persons without understandable speech. Therefore, half of the subjects were taken from this category in an attempt to prove or disprove the assumption. Similarly, an effort was made to select men and women within each of the two categories (with speech and without speech) in relation to vocabulary differences based upon our own personal knowledge of the individual's use of the English language.

After a three-week trial period, seventeen of the twenty questionnaires sent to the subjects were returned and these are being used as a basis for discussion. Every attempt was made to keep the questionnaire objective. This was not entirely possible, however, since of necessity some of the answers required judgment and were therefore subjective in character. A few inconsistencies were evident which might be based upon either an illogical consideration of the question per se or the desire to own a machine.

Fifteen of the seventeen stated that they would like to own a Tellatouch; sixteen were satisfied with the size and weight of the machine; none experienced any noticeable fatigue in using it; only three observed that their finger became somewhat numb after some thirty minutes' conversation. It was not possible to tabulate the total number of hours the machines were actually tested during the trial period because some of the responses were phrased in general terms. However, there was sufficient indication of time spent to substantiate the other statements in the questionnaire.

In order to analyze answers to the highly significant questions concerning scope of trial experiences, communication with strangers, and communication with family and friends, it was necessary to compare the results in relation to the four different types of subjects chosen. For clarity, these shall be designated as follows:

Group A-1	Subjects with speech and extensive vocabularies (5 questionnaires returned)
Group A-2	Subjects with speech and limited vocabularies (4 questionnaires returned)
Group B-1	Subjects without speech and extensive vocabularies (4 questionnaires returned)
Group B-2	Subjects without speech and limited vocabularies (4 questionnaires returned)

Fortunately, the proportion of the responses received was nearly balanced (5-4-4-4) according to the groupings. The following tables supply data regarding the key areas of investigation:

The fact that almost two-thirds of the subjects found people talking to them who had been unwilling to do so before would seem to indicate that Tellatouch could meet the urgent need of influencing others to attempt conversation with the deaf-blind.

In trying Tellatouch with strangers, eight out of the nine subjects *with speech* felt it equal to or better than other methods of communi-

TABLE I. *Scope of Trial Experiences*

		A-1	*A-2*	*B-1*	*B-2*
With how many different people did subjects try Tellatouch?					
	Group Average:	15	7	15	6
Were people interested in using Tellatouch who had previously been unwilling to converse with subject?					
	Yes:	3	3	3	2
	No:	2	1	1	2

TABLE II. *Communication with Strangers*

	A-1	*A-2*	*B-1*	*B-2*
With strangers, did Tellatouch compare favorably with other methods used?				
Yes:	4	4	1	1
No:	0	0	2	1
Undecided:	1	0	1	2
Was the speed satisfactory?				
Yes:	2	4	2	3
No:	2	0	2	1
Undecided:	1	0	0	0

TABLE III. *Communication with Family and Friends*

	A-1	*A-2*	*B-1*	*B-2*
With family and friends, did Tellatouch compare favorably with methods ordinarily used?				
Yes:	1	4	2	1
No:	4	0	2	3
Was it found to be as fast as these usual methods?				
Yes:	0	3	1	1
No:	5	1	3	3

cation. In sharp contrast, only two of the eight without speech considered it effective—though three were undecided. On the basis of these figures alone, it would appear that a deaf-blind person must have speech in order to use Tellatouch with satisfaction. However, in view of the complete lack of correlation between the comments submitted with the questionnaire and the negative replies from this group concerning their use of the machine with strangers, it seemed necessary to employ a great deal of subjective interpretation in order to reach

any valid conclusion. Comments from three-quarters of those without speech (6) indicated that they felt it would be useful for emergencies and explained the methods they had used to reply, i.e., by writing on a pad or typing. One man was interested enough to memorize the keyboard so that he could point to the letters and spell out his responses in this way. It is quite possible, therefore, that the machine would perform a definite function in such instances and for that reason alone we believe its use would be justified.

In considering the speed with which strangers conversed by means of Tellatouch, it was noted that seven out of eight people with limited vocabularies expressed greater satisfaction with the speed than did those with extensive vocabularies. The influencing factors here might have been lack of experience in meeting strangers and/or lack of any appreciable speed in conversation normally. The general comments from subjects in each of the groups implied that the "sender" as well as the "receiver," needed practice in order to develop speed.

Almost half of the subjects indicated that they liked Tellatouch as well as their usual methods of conversing with everyday associates, although more than two-thirds of them felt that it was slower. Presumably, their customary methods, familiar in daily practice over a long period of time, and well known also to family and friends, would have proved more satisfactory than the newly-acquired machine. For this reason, it was surprising that *any* gave it equal preference in response to these questions. However, upon further analysis based on our personal knowledge of individual, environmental factors, it became evident that none of the eight subjects favoring Tellatouch had previously been able to establish adequate communication with those in their immediate surroundings. Some lived in institutions for the blind, homes for the aged, and similar residential situations, where they had been almost entirely excluded from conversation with fellow residents. Others, although living at home, had experienced equal difficulty with friends and relatives who had apparently never become proficient in any one of the usual methods.

Summary of Comments

With two exceptions, comments received from the entire group were extremely favorable. Perhaps the most outstanding—and unanimous—reaction was that that it created immediate interest among the general public and helped to advertise the fact that it is possible to communicate with deaf-blind people.

Many of the respondents wrote at great length giving details of

successful contacts they had experienced during the trial period and considered the machine simple to operate and easy to understand.

Others cited illustrations of emergency situations in which they believed Tellatouch could prove essentially valuable, and a number mentioned having used it effectively with blind, as well as deaf-blind friends.

In spite of the fact that it was considered a slower method of communication than the one-hand manual alphabet or the alphabet glove, several people felt that it had the advantage over these methods in that it required less physical exertion.

Inquiries addressed to the American Foundation for the Blind from deaf-blind people not included in the study expressed an eagerness to learn more about the machine and to try it personally. It was indicated that this interest had been initiated through correspondence with the subjects themselves and reflected the high degree of enthusiasm with which Tellatouch had apparently been received.

The following suggested improvements were offered by the subjects:

1. That the keys be arranged according to the typewriter keyboard. (3 requests)
2. That the number and capial signs and punctuation marks be eliminated, as well as the numerals on the top row of the keyboard. (1 request)
3. That the braille cell be enlarged. (2 requests)
4. That directions be furnished, in print as well as in braille, to instruct the "sender" in the proper method of depressing the keys. (12 requests)

Conclusions

As a result of experimental study it now seems apparent that the specific values of Tellatouch outweighs the minor drawbacks, most of which can be overcome. While it is recognized that the three-week trial was too short a period for any one subject to reach his potential in the use of the machine, the accumulated evidence has led the American Foundation for the Blind to believe that more extensive experience will prove Tellatouch a constructive aid for the majority of deaf-blind people.